

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 3

Remarks: General

The claims have been amended by rewriting Claim 110 for the purpose of presenting therein a more detailed description of certain features of particular interest that are included among the various embodiments of this invention. Other claims that are dependent thereon have also been amended to correct dependency or to provide for compatibility of phrasing in the claims.

Claims 68~70, 74 and 111~123 have been cancelled without prejudice to or disclaimer of the subject matter thereof, which now leaves Claims 71, 75~77, 79, 80 and 110 active in the application.

No new matter is added in the amended or new claims inasmuch as various words, phrases and/or textual passages therein that may not have been present in the claims as originally filed, or as previously amended, find basis in the specification as follows:

in Claim 110, support for the recitation as to a multi-layer patterned structure may be found on page 16 at line 12 to page 17 at line 2;

in Claim 110, support for the recitation as to particles derived from transition metals, metalloids, metal alloys or mixtures thereof may be found on page 11 at lines 13~15; and

in Claim 110, support for the recitation as to carbon nanotubes may be found on page 12 at line 1.

A request for continued examination under 37 CFR §1.114 is enclosed, the fee for which should be charged to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

By Applicant's calculation, no fee is due by reason of this amendment to the claims. If any fee other or further than that mentioned specifically above is required to authorize or obtain consideration of this response, please charge such fee to Deposit Account No. 04-1928.

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 4

Applicant hereby requests entry of the above described amendments, and requests reconsideration and further examination of the application in view of those amendments and the reasons it has set forth below for allowance of the claims.

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 5

Remarks: Detailed Action

I.

In Items 1 and 2, the Examiner has rejected various claims under 35 U.S.C. §112, first and second paragraphs, with respect to the recitations therein concerning triodes. Many of those claims have been cancelled, and the others have been amended such that they employ alternative recitations. Applicant consequently believes that the rejections under 35 U.S.C. §112 are no longer applicable, and respectfully requests that the Examiner withdraw them.

II.

In Item 3, the Examiner has rejected Claims 68-71, 74, 75, 79, 80, 110-118 and 121-123 under 35 U.S.C. §103(a) as being unpatentable over Bouchard in view of Imai and Cernigliaro. Claims 68-70, 74, 111-118 and 121-123 have been cancelled.

In Item 4, the Examiner has rejected Claims 68-77, 79, 80 and 110-123 under 35 U.S.C. §103(a) as being unpatentable over Bouchard in view of Cernigliaro, Imai, Anderson, Thackery and Hanabata. Claims 68-70, 74 and 111-123 have been cancelled.

It is respectfully submitted that the cited references, alone or in any combination, do not teach or suggest a multi-layer patterned structure, as described in the pending claims. Although Bouchard does discuss imaging in multi-layers, there is no motivation for the artisan to combine the teachings of the various references to use a positive imageable photopolymer system to produce both the first and second patterned structures as claims because of the differences between the kinds of particles used in each structure - transition metals, metalloids, metal alloys or mixtures thereof in a first structure, and carbon nanotubes in a second structure.

In view of the above distinctions between the cited references and the subject matter of the pending claims, Applicant respectfully

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 6

requests the Examiner to withdraw the rejection of the pending claims under 35 U.S.C. §103(a).

In view of the foregoing, Applicant submits that all of the Examiner's objections and rejections have been properly traversed, and that the pending claims are in condition for allowance, request for which is hereby respectfully made.

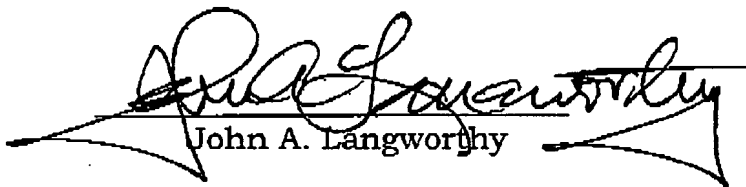
Respectfully submitted,



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I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on October 31, 2007.

Date: October 31, 2007



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Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 7

Appendix A

(i) Amendments in marked-up form to
Claims 71, 75~77, 79, 80 and 110; and

(ii) Status of all pending claims
(71, 75~77, 79, 80 and 110).

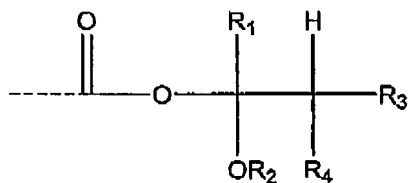
1 ~ 70. (cancelled).

71. (currently amended) A ~~tride-structure~~ tride-structure according to Claim ~~70~~110 wherein the transition metals are selected from the group consisting of Al, Cu, Ag, Au, Pt, and Pd.

72 ~ 74. (cancelled).

75. (currently amended) A ~~tride-structure~~ tride-structure according to Claim 110 wherein the photopolymer system is selected from the group consisting of novolac-diazonaphthoquinone resins.

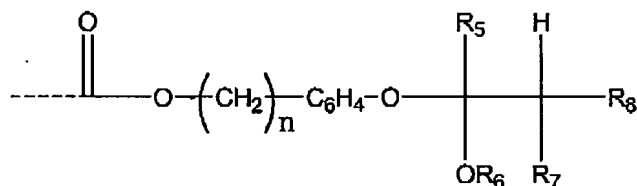
76. (currently amended) A ~~tride-structure~~ tride-structure according to Claim 110 wherein the photopolymer system comprises a (meth)acrylate polymer or copolymer that comprises one or more of the pendant groups as described by Formulae I, II and III, to-wit:



Formula I

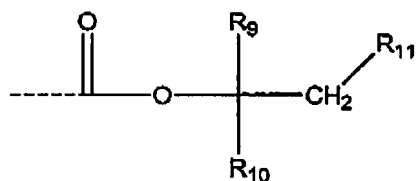
Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 8

wherein R_1 is hydrogen or C_1 - C_6 alkyl; R_2 is C_1 - C_6 alkyl; and R_3 and R_4 independently are hydrogen or C_1 - C_6 alkyl; and wherein R_1 and R_2 , or R_1 and R_3 , or R_2 and R_3 may be joined to form a 5-, 6-, or 7-membered ring.



Formula II

wherein n is 0-4; R_5 is hydrogen or C_1 - C_6 alkyl; R_6 is C_1 - C_6 alkyl; and R_7 and R_8 independently are hydrogen or C_1 - C_6 alkyl; and wherein R_5 and R_6 , or R_5 and R_7 , or R_6 and R_7 may be joined to form a 5-, 6-, or 7-membered ring.



Formula III

wherein R_9 is hydrogen or lower alkyl; R_{10} is lower alkyl; and R_{11} is hydrogen or lower alkyl; and wherein a lower alkyl group includes alkyl groups having 1 to 6 linear or 3 to 6 cyclic carbon atoms.

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 9

77. (currently amended) A ~~tride-structure~~ according to Claim 110 wherein the photopolymer system comprises one or more acid labile monomeric components selected from:

tetrahydropyranyl methacrylate (or acrylate);
tetrahydropyranyl p-vinylbenzoate;
1-ethoxy-1-propyl p-vinylbenzoate;
4-(2-tetrahydropyranyloxy)benzyl methacrylate (or acrylate);
4-(1-butoxyethoxy)benzyl methacrylate (or acrylate);
t-butyl methacrylate (or acrylate);
neopentyl methacrylate (or acrylate);
1-bicyclo{2,2,2}octyl methacrylate (or acrylate) and their derivatives;
1-bicyclo{2,2,1}heptyl methacrylate (or acrylate) and their derivatives;
1-bicyclo{2,1,1}hexyl methacrylate (or acrylate) and their derivatives;
1-bicyclo{1,1,1}pentyl methacrylate (or acrylate) and their derivatives;

and

1-adamantyl methacrylate (or acrylate) and their derivatives.

78. (cancelled).

79. (currently amended) A ~~tride-structure~~ according to Claim 110 wherein, in one or both of the first and second patterned structures, the particulates comprise about 20 to about 70 vol% of the composition individual patterned structure.

80. (currently amended) A ~~tride-structure~~ according to Claim 110 wherein one or more of the particulates are less than 100 microns in their longest dimension.

81 ~ 109. (cancelled).

Application No. 10/728,210
Art Unit 1795, Examiner Schilling
Docket No. CL-2248 US NA
October 31, 2007
Page No. 10

110. (currently amended) ~~A normal gate triode that comprises a gate layer and a dielectric layer, wherein (a) each layer comprises a composition that comprises (i) at least one positive imageable photopolymer system, and (ii) about 1 to about 70 vol% particulates, and (b) each layer has the same size.~~ A multi-layer patterned structure that comprises (a) a first patterned structure comprising (i) at least one positive imageable photopolymer system, and (ii) about 1 to about 70 vol% particulates derived from transition metals, metalloids, metal alloys or mixtures thereof; and (b) a second patterned structure comprising (i) at least one positive imageable photopolymer system, and (ii) about 1 to about 70 vol% particulates comprising carbon nanotubes.

111 ~ 123. (cancelled).